

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

REMARKS

Claims 1, 17 and 19 are amended to more clearly recite the subject matter of the invention.

Claims 1 and 5-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over applicants' admitted prior art in view of Bissell et (6,574,730). Claims 2-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over applicants' admitted prior art and Bissell as applied to claim 1 in view of Sawyer et (6,324,271 B1), claim 4 in view of Arkko et al. (20020052200 A1). Claims 18-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art and Bissell in view of Hanson et (6,014,427), claims 25-32 in view of Sawyer, claim 34 further in view of Bissell and claims 35-38 further in view of Hanson et al. (6,014,427). It is noted that, although claim 33 was included within the range of claims indicated to have been rejected on the Office Action Summary page, no explicit rejection was asserted and, accordingly, absent any such statement of and basis for a rejection, claim 33 is considered to be allowable. All other rejections having been made under 35 U.S.C. § 103(a) are respectfully traversed in view of the amendments to the claims and for the reasons that follow.

Claims 1 - 24

Claims 1 and 5-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art in view of Bissell et (6,574,730). Claims 2-3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art and Bissell as applied to claim 1 in view of Sawyer et (6,324,271 B1), claim 4 in view of Arkko et al. (20020052200 A1). Claims 18-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over applicants' admitted prior art and Bissell in view of Hanson et (6,014,427).

In connection with independent claim 1, the Examiner has taken the position that the admitted prior teaches all of the subject matter of the claim except that it "does not disclose the signaling system security monitor configured to evaluate an encrypted portion of said control data messages so as to authenticate corresponding ones of said control messages and, in response, determine if said control data messages are proper." The Examiner applies Bissell as disclosing the missing elements with reference to column 5, lines 15 - 65 and column 6, lines 28 - 45.

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

It should be noted that there is a significant difference between applicants' invention and the teachings attributable to the Bissell patent. In particular, Bissell describes authentication mechanisms for use between an end terminal, such as a residential computer and a network authentication server as might be used when logging into an ISP. The "OFF HOOK" mentioned throughout the Bissell disclosure and incorporated into the corresponding claims is a protocol message for a telephone set. The relationship described by Bissell is between the access side of a PSTN switch or IP network (i.e., DTE, DCP, CPE) and a server connected to the DTE through the use of the PSTN connection. In contrast, applicants' invention is directed to embodiments that are internal to the PSTN network and the signaling that is required to establish the type of connection that Bissell might use to exchange his authentication information. That is, Bissell describes authentication to a database that has a telephony-type communications transport link between the terminal and the database, not to:

a signaling system security monitor, separate from the central office switching systems, said signaling system security configured to evaluate an encrypted portion of said control data messages so as to authenticate corresponding ones of said control messages and, in response, determine if said control data messages are proper

as required by the rejected claims.

Applicants do not contend that security authentication techniques, such as IPSec, Secure Hashing Algorithm (SHA) and other authentication arrangements standing alone were new at the time of the invention. To the contrary, such techniques were already known to those skilled in the art of electronic security. However, what applicants maintain is unique is the application of these security techniques to a particular problem that results in a new and non-obvious solution to a previously, if not unidentified, unsolved problem.

The Examiner's rationale for incorporating the teaching of Bissell is that "[o]ne of ordinary skill in the art would have been motivated to do this because the system would remove the call set-up procedure carried out by the customer, which would remove the inconvenience from the customer." However, it is unclear how such motivation, even if proper, would apply to modification of the admitted prior art described in the instant application to incorporate the teaching of Bissell. Instead, the rationale provided by the Examiner appears to be that provided

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

by Bissell for implementing an authentication code to be used by a terminal to authenticate itself to the network, i.e., such motivation is the motivation for Bissell but is inapplicable to the subject matter of applicants' invention. That is, according to Bissell, requiring a customer to manually provide some form of authentication is "an inconvenience which it would be advantageous to remove from that part of the call set-up procedure carried out by the customer." Bissell at column 1, lines 47 – 49.

In contrast, the background of applicants' invention involves an interconnection between networks, not access by a customer using a terminal. There is no issue of customer convenience since the customer has no interaction with the signaling network or the control data messages carried by that network. The motivation relied upon by the Examiner as the basis for application of Bissell is simply inapposite to the technological background of the instant invention. The purpose of the various embodiments of the invention is not to facilitate authentication on behalf of benign networks; it is to deny access to unauthorized or spoofed messages by means of authentication.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In *re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." (916 F.2d at 682, 16 U.S.P.Q.2d at 1432.). See also In *re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992) (flexible landscape edging device which is conformable to a ground surface of varying slope not suggested by combination of prior art references).

Even if the asserted combination would result in rendering any of the claims obvious, the lack of motivation therefore makes the combination improper. It is well established that, even if all aspects of the claimed invention were individually known in the art, such is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). It is, therefore, incumbent upon the Examiner to provide some suggestion of the desirability of doing what the inventor has done in the Examiner's formulation, imposition and

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

maintenance of a rejection under 35 U.S.C. § 103(a). "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

Accordingly, for the reasons presented, claims 1 - 24 are considered to be non-obvious over the art of record and withdrawal of the outstanding rejection under 35 U.S.C. § 103(a) is respectfully requested.

The claims dependent from claim 1 (i.e., claims 2 - 24) are considered to be allowable both as dependent from the allowable subject matter of claim 1 and further as reciting additional subject matter not found in or rendered obvious by the applied art. For example, claim 7 recites

The communications network according to claim 1 wherein said signaling system security monitor includes a memory storing states of respective ones of said central office switching systems, said processor additionally responsive to said states for determining if said control messages are proper.

Addressing this claim, the Examiner takes the position that:

Bissell discloses operation of a telephony service may be modeled in terms of a sequence of states a call may go through. Bissell uses the off-hook condition to define when and how authentication is initiated (column 8 lines 9-50); and therefore when the control messages are proper.

However, even if Bissell recognizes that there are various states of a system, this does not render obvious the cited claim language which requires not only that a system include states (as broadly do all systems) but that the system states be stored and form a basis to determine if a control message is proper. Thus, even if correct, the mere realization that there are states is insufficient to defeat patentability of the storage and use of this state information to protect a network from improper control messages.

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

In connection with claims 18 – 24, the Examiner relies on Hanson in formulating the outstanding rejection of those claims. However, as an initial matter, Hanson is drawn from non-analogous art. Hanson is directed to a voice mail system providing the creator of a voice mail message with an ability to pre-define a response to the message. This has nothing to do with mediating control messages transmitted between communications networks, the field to which the instant application is directed. This dissimilarity of technological fields is evidenced by the disparity of classifications assigned to the Bissell and Hanson patents. In this case, the prior art reference is not in the field of applicants' endeavor or reasonably pertinent to the particular problem with which the inventor was concerned.

Further, even if Hanson were properly combinable with the admitted prior art and Bissell, the combination would still fail to render obvious the invention of the rejected claims. For example, in connection with claim 19, the Examiner takes the position that the templates recited by that claim are taught by Hanson. However, while Hanson does use the term "template" in his disclosure, it is in connection with providing a starting point for the creation of an action message on behalf of an end user, not for use in determining whether a control data message is proper by such templates corresponding to approved control data messages. There are similar disparities in the application of Hanson in the rejection of the remaining dependent claims including, but not limited to, claims 20 and 21 that further address templates.

Thus, for the reasons presented above, claims 1 – 24 are considered to be allowable over the art of record and withdrawal of the outstanding rejection thereof under 35 U.S.C. § 103(a) is respectfully requested.

Claims 25-32 and 34-38

Claims 25-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over applicants' admitted prior art in view of Sawyer, claim 34 further in view of Bissell and claims 35-38 further in view of Hanson et al. (6,014,427). These rejections are respectfully traversed as being improperly based on hindsight, the Examiner again having failed to identify legally cognizable motivation for making the asserted combinations.

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

It is again noted that claim 33, not having been included in the statement of the rejection in the Detailed Action, is considered to be allowable with no prior art having been applied against the subject matter recited therein.

Addressing the detailed rejection of claim 25 together with claims 26-32 and 34 – 38 dependent therefrom, the Examiner initially states that the admitted prior art discloses what amounts to the first step of claim 25, i.e., exchanging control data message between a remote communication network and a local signaling communication system. For the remaining four steps of the claim the Examiner relies on Sawyer:

Sawyer discloses an authentication server on an SS7 network (Fig. 1 part 80) that is configured to exchange and maintain encryption key certificates (column 5 lines 27-33). Sawyer teaches that the system uses the X.509 protocol. The X.509 is a digital certificate that is distributed in order to authenticate the user. Sawyer discloses a digital signature; digital signatures are decrypted in order to authenticate the signature. This information is used to authenticate the terminal 10; and then therefore selectively provide the connection for the terminal.

The Examiner considers the combination together with the admitted prior art to be proper because:

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use digital certificates as in Sawyer in the system as disclosed in applicants' admitted prior art. One of ordinary skill in the art would have been motivated to do this because digital certificates assert that the specific token is linked to a unique person at a specific time and date.

As an initial matter, it is difficult to understand why one skilled in the art of communications networks, having before them the single step of exchanging control data messages between networks, would be so motivated so as to implement the remaining four steps of claim 25. The motivation for such combination can only be found in hindsight based on applicants' disclosure. This is further evident as applicants' certificates are assigned to networks or network elements, not to persons as per the prior art such that, even if made, the combination would fail to describe or suggest the subject matter of the rejected claims including, for example:

decrypting a certificate portion of said control messages so as to authenticate origination point code information.

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

Unlike the claimed invention, Sawyer is directed to certifying (digitally signing) a telecommunications service. According to Sawyer, an AIN (Advanced Intelligent Network) is used to collect a type of authentication code, whether a PIN or time-dependent authenticator. Some type of byte code indicating that the subscriber has been authenticated is passed across the SS7 network to another AIN (SCP) where the information is translated into a code to deliver Caller ID that is verifiable to the receiving subscriber. In contrast, applicants' invention is directed to authenticating service information (i.e., Caller ID) and not the SS7 signaling protocol that is employed to control the PSTN switches. In Sawyer, the purpose is to vouchsafe a calling party's identity, not a network element connecting to the SS7 network as is applicants' invention. Not only does the prior art fail to describe or suggest such a feature, but the environment of the invention and the problem addressed thereby so significantly different from that described by the applied art for the reasons presented *supra* go to be un-combinable under the statute. These differences further render non-obvious the modification of the admitted prior art as suggested by the Examiner.

Lacking motivation supplied by the prior art for making the asserted combination, the outstanding rejection under 35 U.S.C. § 103(a) is improper and withdrawal thereof is respectfully solicited. The mere fact that one skilled in the art could have decided to include a certificate portion of a control message is insufficient where there was no motivation found in the prior art to do so. It is not sufficient for the Examiner to provide rationale based on the hindsight realization of benefits provided by the combination; there must be motivation provided by the references (see discussion above in connection with the rejection of claims 1 – 24). Here, there is no such motivation provided by the prior art. See M.P.E.P. § 2143.01: *Suggestion or Motivation To Modify the References*.

Further, since Sawyer is directed to certifying a telecommunications service, the proposed modification suggested by the reference would at most suggest authentication of a subscriber. Implementation of this modification would thereby change the principle of operation of the admitted prior art by requiring specialized equipment as part of the terminal equipment. Thus, even if there were motivation for making the asserted combination, it would still be improper: if the proposed modification or combination of the prior art would change the principle of operation

Application No.: 09/767,292

Docket No.: 00-VE4.75B CIP

of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. See *Id.*

The rejected dependent claims are further considered to be allowable as reciting additional subject matter not found in the art of record. For example, the Examiner rejects claim 34 over the admitted prior and Sawyer in view of Bissell. Again, there is simply no motivation supplied by the prior art for making this combination and, therefore, the rejection under 35 U.S.C. § 103(a) is considered to be improper. Further, even if proper, the states mentioned by Bissell are different from the permissible states recited, e.g., claim 34 as discussed above in connection with claim 7.

In connection with claim 35 – 38, the Examiner again relies on Hanson. However, this rejection and its application of Hanson is likewise believed to be improper for the reasons described above in connection with claim 18 – 24.

For the reasons presented, the rejections of claims 25 – 32 and 34 – 38 are believed improper and withdrawal thereof is respectfully requested.

Application No.: 09/767,292


Docket No.: 00-VE4.75B CIP

Conclusion

In view of the above amendment, applicants believe the pending application is in condition for allowance. Reconsideration and allowance are respectfully requested.

Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 07-2347, from which the undersigned is authorized to draw. To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made, the fee for which should be charged to the above deposit account.

Respectfully submitted,


Joel Wall, Reg. No 25,648

Verizon Corporate Services Group
C/O Christian R. Andersen
600 Hidden Ridge Drive
Mail Code: HQE03H14
Irving, Texas 75038
(972) 718-4800

CUSTOMER NO. 32127

Date: June 17, 2005